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11097779

Basic Patent (No,Kind,Date): EP 536758 A1 19930414 <No. of Patents: 007>

Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date	
DE 69217801	C0	19970410	DE 69217801	A	19921008	
DE 69217801	T2	19970911	DE 69217801	A	19921008	
EP 536758	A1	19930414	EP 92117221	A	19921008	(BASIC)
EP 536758	B1	19970305	EP 92117221	A	19921008	
JP 5100632	A2	19930423	JP 91260188	A	19911008	
JP 2894039	B2	19990524	JP 91260188	A	19911008	
<i>con</i> US 5307085	A	19940426	US 958256	A	19921008	

Priority Data (No,Kind,Date):

JP 91260188 A 19911008

PATENT FAMILY:

GERMANY (DE)

Patent (No,Kind,Date): DE 69217801 C0 19970410

ANZEIGEVORRICHTUNG MIT VERRINGERTER SCHIEBEREGISTER-ARBEITSFREQUENZ  
(German)

Patent Assignee: NIPPON ELECTRIC CO (JP)

Author (Inventor): NAKAMURA TADASHI (JP)

Priority (No,Kind,Date): JP 91260188 A 19911008

Applic (No,Kind,Date): DE 69217801 A 19921008

IPC: \* G09G-003/36

Derwent WPI Acc No: \* G 93-119012

JAPIO Reference No: \* 170451P000076

Language of Document: German

Patent (No,Kind,Date): DE 69217801 T2 19970911

ANZEIGEVORRICHTUNG MIT VERRINGERTER SCHIEBEREGISTER-ARBEITSFREQUENZ  
(German)

Patent Assignee: NIPPON ELECTRIC CO (JP)

Author (Inventor): NAKAMURA TADASHI (JP)

Priority (No,Kind,Date): JP 91260188 A 19911008

Applic (No,Kind,Date): DE 69217801 A 19921008

IPC: \* G09G-003/36

Derwent WPI Acc No: \* G 93-119012

JAPIO Reference No: \* 170451P000076

Language of Document: German

GERMANY (DE)

Legal Status (No,Type,Date,Code,Text):

DE 69217801 P 19970410 DE REF CORRESPONDS TO (ENTSPRICHT)  
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DE 69217801 P 19970911 DE 8373 TRANSLATION OF PATENT  
DOCUMENT OF EUROPEAN PATENT WAS RECEIVED AND  
HAS BEEN PUBLISHED (UEBERSETZUNG DER  
PATENTSCHRIFT DES EUROPÄISCHEN PATENTES IST  
EINGEGANGEN UND VEROEFFENTLICHT WORDEN)

DE 69217801 P 19980402 DE 8364 NO OPPOSITION DURING TERM OF  
OPPOSITION (EINSPRUCHSFRIST ABGELAUFEN OHNE  
DASS EINSPRUCH ERHOBEN WURDE)

EUROPEAN PATENT OFFICE (EP)

Patent (No,Kind,Date): EP 536758 A1 19930414

DISPLAY APPARATUS HAVING SHIFT REGISTER OF REDUCED OPERATING FREQUENCY  
(English; French; German)

Patent Assignee: NIPPON ELECTRIC CO (JP)

Author (Inventor): NAKAMURA TADASHI (JP)  
 Priority (No,Kind,Date): JP 91260188 A 19911008  
 Applic (No,Kind,Date): EP 92117221 A 19921008  
 Designated States: (National) DE; FR; GB  
 IPC: \* G09G-003/36  
 Derwent WPI Acc No: ; G 93-119012  
 Language of Document: English  
 Patent (No,Kind,Date): EP 536758 B1 19970305  
 DISPLAY APPARATUS HAVING SHIFT REGISTER OF REDUCED OPERATING FREQUENCY  
 (English; French; German)  
 Patent Assignee: NIPPON ELECTRIC CO (JP)  
 Author (Inventor): NAKAMURA TADASHI (JP)  
 Priority (No,Kind,Date): JP 91260188 A 19911008  
 Applic (No,Kind,Date): EP 92117221 A 19921008  
 Designated States: (National) DE; FR; GB  
 IPC: \* G09G-003/36  
 Derwent WPI Acc No: \* G 93-119012  
 JAPIO Reference No: \* 170451P000076  
 Language of Document: English

EUROPEAN PATENT OFFICE (EP)

Legal Status (No,Type,Date,Code,Text):

EP 536758	P	19911008	EP AA	PRIORITY (PATENT APPLICATION) (PRIORITAET (PATENTANMELDUNG))
				JP 91260188 A 19911008
EP 536758	P	19921008	EP AE	EP-APPLICATION (EUROPAEISCHE ANMELDUNG)
				EP 92117221 A 19921008
EP 536758	P	19930414	EP AK	DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH REPORT (IN EINER ANMELDUNG BENANNTEN VERTRAGSSTAATEN)
				DE FR GB
EP 536758	P	19930414	EP A1	PUBLICATION OF APPLICATION WITH SEARCH REPORT (VEROFFENTLICHUNG DER ANMELDUNG MIT RECHERCHENBERICHT)
EP 536758	P	19930414	EP 17P	REQUEST FOR EXAMINATION FILED (PRUEFUNGSANTRAG GESTELLT)
				930129
EP 536758	P	19950419	EP 17Q	FIRST EXAMINATION REPORT (ERSTER PRUEFUNGSBESCHEID)
				950303
EP 536758	P	19970305	EP AK	DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT SPECIFICATION: (IN EINER PATENTSCHRIFT ANGEFUEHRTE BENANNTEN VERTRAGSSTAATEN)
				DE FR GB
EP 536758	P	19970305	EP B1	PATENT SPECIFICATION (PATENTSCHRIFT)
EP 536758	P	19970410	EP REF	CORRESPONDS TO: (ENTSPRICHT)
				DE 69217801 P 19970410
EP 536758	P	19970516	EP ET	FR: TRANSLATION FILED (FR: TRADUCTION A ETE REMISE)
EP 536758	P	19980225	EP 26N	NO OPPOSITION FILED (KEIN EINSRUCH EINGELEGT)
EP 536758	P	20020101	GB IF02/REG	EUROPEAN PATENT IN FORCE AS OF 2002-01-01

JAPAN (JP)

Patent (No,Kind,Date): JP 5100632 A2 19930423  
 DISPLAY DEVICE (English)  
 Patent Assignee: NIPPON ELECTRIC CO  
 Author (Inventor): NAKAMURA SHIYUJI  
 Priority (No,Kind,Date): JP 91260188 A 19911008  
 Applic (No,Kind,Date): JP 91260188 A 19911008  
 IPC: \* G09G-003/20; G09G-003/36  
 JAPIO Reference No: ; 170451P000076  
 Language of Document: Japanese  
 Patent (No,Kind,Date): JP 2894039 B2 19990524  
 Patent Assignee: NIPPON ELECTRIC CO  
 Author (Inventor): NAKAMURA SHUJI  
 Priority (No,Kind,Date): JP 91260188 A 19911008  
 Applic (No,Kind,Date): JP 91260188 A 19911008  
 IPC: \* G09G-003/20  
 Language of Document: Japanese

UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 5307085 A 19940426  
 DISPLAY APPARATUS HAVING SHIFT REGISTER OF REDUCED OPERATING FREQUENCY  
 (English)  
 Patent Assignee: NIPPON ELECTRIC CO (JP)  
 Author (Inventor): NAKAMURA TADASHI (JP)  
 Priority (No,Kind,Date): JP 91260188 A 19911008  
 Applic (No,Kind,Date): US 958256 A 19921008  
 National Class: \* 345099000; 345200000; 345204000  
 IPC: \* G09G-003/00  
 Derwent WPI Acc No: \* G 93-119012  
 JAPIO Reference No: \* 170451P000076  
 Language of Document: English

UNITED STATES OF AMERICA (US)

Legal Status (No,Type,Date,Code,Text):  
 US 5307085 P 19911008 US AA PRIORITY (PATENT)  
 JP 91260188 A 19911008  
 US 5307085 P 19921008 US AE APPLICATION DATA (PATENT)  
 (APPL. DATA (PATENT))  
 US 958256 A 19921008  
 US 5307085 P 19921127 US AS02 ASSIGNMENT OF ASSIGNOR'S  
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 NEC CORPORATION 7-1, SHIBA 5-CHOME,  
 MINATO-KU, TOKYO, JAPAN ; NAKAMURA, TADASHI :  
 19921113  
 US 5307085 P 19940426 US A PATENT

DIALOG(R) File 347:JAPIO  
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04108932      \*\*Image available\*\*  
DISPLAY DEVICE

PUB. NO.:        05-100632 [ JP 5100632    A]  
PUBLISHED:      April 23, 1993 (19930423)  
INVENTOR(s):    NAKAMURA SHIYUUJI  
APPLICANT(s):   NEC CORP [000423] (A Japanese Company or Corporation), JP  
                  (Japan)  
APPL. NO.:      03-260188 [JP 91260188]  
FILED:          October 08, 1991 (19911008)  
INTL CLASS:     [5] G09G-003/20; G09G-003/36  
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JAPIO KEYWORD: R011 (LIQUID CRYSTALS)  
JOURNAL:        Section: P, Section No. 1595, Vol. 17, No. 451, Pg. 76,  
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#### ABSTRACT

PURPOSE: To lower the driving frequency of the shift registers of a data driving circuit by dividing a data-side driving circuit and providing a converting circuit which transfers data to respective shift registers in parallel.

CONSTITUTION: A data signal 23 is inputted in series and its data corresponding to the shift registers 1-4 are distributed on a time-division basis to memories 1-4 with divided clock signals 1-4. Namely, the memory 1 is stored with the data for the shift register 1 and the memory 2 is stored with the data for the shift register 2; and the memory 3 is stored with the data for the shift register 3 and the memory 4 is stored with the data for the shift register 4. The data stored in the memories 1-4 are read out with a data transfer clock 10 as transfer data 1-4. The transfer frequency of the data transfer clock 10 to the shift registers 1-4 is reduced to a quarter as high as that of a the clock signal 22 since the data signal 23 is converted into four bits of the transfer data 1-4.

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